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#331

WATCH OUT FOR *Witchweed*



a new
parasitic plant
that attacks
corn
sugarcane
sorghum
and other
plants



PA-331

UNITED STATES DEPARTMENT OF AGRICULTURE

WATCH OUT FOR *Witchweed*

a new parasitic plant that attacks corn, sugarcane, sorghum, and other plants

Witchweed¹ is a parasitic plant that attacks corn, sorghum, sugarcane, rice, wheat, oats, barley, and more than 60 species of the grass and sedge families, and some broad-leafed plants. This weed is a serious pest in South Africa, and occurs in many other parts of the Eastern Hemisphere. It was first discovered in the Western Hemisphere in adjoining areas of North Carolina and South Carolina in 1956.

Each year intensive surveys have revealed some additional infestations in counties adjacent to those originally found infested. Eradication measures under the State-Federal program are extended to all infestations as rapidly as found. The area of known infestation is shown on the map below.

DAMAGE

Crop damage depends on the degree of infestation.

When witchweed was first discovered in the Carolinas corn yields in some in-

fested fields were complete failures. Witchweed was observed parasitizing crabgrass in fields of tobacco, peanuts, beans, peas, and sweetpotatoes.

Witchweed roots attach to and penetrate the roots of host plants. This reduces the efficiency of host plants in obtaining food and water.

Symptoms resemble those produced by acute drought. The plants become stunted, wilt, and turn yellowish. They die if they are heavily parasitized.

Roots of host plants appear to have masses of hairlike rootlets.

APPEARANCE

Witchweed plants above ground are small and bright green. The leaves are slightly hairy and the upper and lower leaf surfaces look alike.

The plants rarely grow more than 8 or 9 inches high. Some, however, may reach a height of 18 inches.

The flowers are small and usually brick red or scarlet, although some may be yellowish red, yellowish, or almost white.

¹ *Striga asiatica* (L.) Kuntze.



WITCHWEED



(A) corn plant
stunted by
witchweed

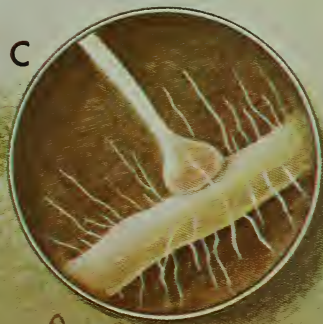
(B) general ap-
pearance of
the weed

(a) seed pods

(b) blossoms

(C) attachment
of weed root
to corn root
(greatly mag-
nified)

The pencil is to
indicate actual
size of plant



HOW IT GROWS

The seeds, which are nearly microscopic, may lie dormant 15 to 20 years. They may be spread by wind, water, or anything that moves seed-infested soil. A witchweed plant can produce up to half a million seeds.

To germinate, a seed normally must be stimulated by secretions from roots of host plants.

When the witchweed seedling starts to grow, its roots must contact, attach to, and penetrate the roots of a host. Otherwise, it dies.

After its roots penetrate roots of a host, the witchweed depends on the host for food and water until it emerges from the soil.

The shoot emerges from the soil about 30 days after germination. After emergence, the plant turns green and manufactures its own food but continues to depend partially on the host for water and minerals.

Flowering begins about 30 days after the seedling emerges. The first flowers appear near the base of the plant. Seed pods burst about 4 weeks after flowers appear.

Seeds scatter over the soil for the next month or so. Flowering and seed production continue until cold weather.

The life cycle of the parasite—from germination to release of first seeds—takes 90 to 120 days.

Witchweed grows best in warm temperatures and on light soils containing considerable moisture. It will, however, grow under a wide range of soil, temperature, and moisture conditions.

CONTROL

Control witchweed by reducing the amount of witchweed seed in the soil. Stimulate germination of seed in the soil and destroy witchweed plants after they emerge from the soil but before they produce seed.

Witchweed on Cultivated Land

WHERE INFESTATIONS ARE LIMITED

To destroy witchweed in your fields where infestations are limited, plant corn to stimulate witchweed seed germination. After witchweed emerges from the soil and at or just before

flowering, apply an amine salt of 2,4-D at $\frac{1}{2}$ to 1 pound acid equivalent per acre. Repeat the treatment at 3- or 4-week intervals or as often as needed to prevent flowering and seed production.

WHERE INFESTATIONS ARE HEAVY AND GROWING CORN IS NO LONGER PROFITABLE

- Plant corn to stimulate witchweed seed germination and plow under or disk in the crop before witchweed plants mature.

- Follow with a second crop, such as sorghum or millet. Plow this under after witchweed appears but before witchweed seeds mature.

- Late in the fall, plant a winter cover crop that will promote witchweed seed germination; a small grain, such as winter oats, is desirable for this purpose. Ordinarily, any witchweed that develops in this crop will be killed by frost before producing mature seed.

- Continue these practices until the soil is free of witchweed seeds.

Witchweed on Noncultivated Land

On noncultivated land, spray witchweed plants with a weedkiller before they produce seeds. Apply treatment as often as necessary during the growing season to kill all plants before seed production.

OTHER SUGGESTIONS

Crabgrass and other weed grasses are hosts for witchweed. All crops must be kept free of crabgrass. Cultivate or treat crops with an appropriate herbicide to kill crabgrass and other weed grasses.

Notify your county agricultural agent if you find witchweed or a plant that you think may be witchweed.

Do not move plants suspected of being witchweed—request an on-the-farm identification from your county agent.

Ask your county agent or State regulatory official to explain the cooperative State-Federal eradication program.

Prepared by the Plant Pest Control Division
and Crops Research Division
Agricultural Research Service

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